Application No. 10/019,381
Amendment dated January 28, 2008
Response to Final Office Action of Nov. 28, 2007

Atty. Docket No. 42390P9268
Examiner ARMSTRONG, Angela A.
TC/A.U. 2626

 **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1.      (Currently Amended) A method comprising:

scaling a decision tree-based acoustical model which is based on a vocabulary, wherein the scaling merges at least one node of the decision tree-based acoustical model with a parent node of the at least one node, ~~the merging based on a subset of the vocabulary which is used in a given task~~ based on whether the at least one node represents a subset of the vocabulary which is used in a given task, wherein the merging occurs independent of whether the parent node of the at least one node represents a subset of the vocabulary which is used in the given task;

receiving speech information of the given task; and

processing the received speech information based on the scaled decision tree-based acoustical model.


2.      (Currently Amended) The method of claim 1, wherein ~~the decision tree-based acoustical model is a decision tree-based hidden markov model (HMM)~~ merging the at least one node based on whether the at least one node represents a subset of the vocabulary which is used in a given task includes merging the at least one node with the parent node if at least one descendant node of the parent node does not represent a subset of the vocabulary which is used in the given task.


3.      (Previously Presented)      The method of claim 1, further comprising:

adapting the scaled decision tree-based acoustical model for the given task.

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4.      (Currently Amended) A system comprising:

a memory to store a decision tree-based acoustical model which is based on a vocabulary;

a processor to scale the decision tree-based acoustical model, wherein the scaling merges at least one node of the decision tree-based acoustical model with a parent node of the at least one node, ~~the merging based on a subset of the vocabulary which is used in a given task~~ based on whether the at least one node represents a subset of the vocabulary which is used in a given task, wherein the merging occurs independent of whether the parent node of the at least one node represents a subset of the vocabulary which is used in the given task;

an input device to receive speech information of the given task; and

a signal processor to process the received speech information based on the scaled decision tree-based acoustical model.


5.      (Previously Presented)      The system of claim 4, wherein the decision tree-based acoustical model is a decision tree-based hidden markov model (HMM).


6.      (Previously Presented)      The system of claim 4, wherein the processor is to adapt the scaled decision tree-based acoustical model for the given task.


7.      (Currently Amended) A computer-readable medium having instructions stored thereon, which if executed by a processor, cause the processor to perform the operations comprising:

scaling a decision tree-based acoustical model which is based on a vocabulary, wherein the scaling merges at least one node of the decision tree-based acoustical model with a parent node of the at least one node, ~~the merging based on a subset of the vocabulary which is used in a given task~~ based on whether the at least one node represents a subset of the vocabulary which is used in a given task, wherein the merging

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occurs independent of whether the parent node of the at least one node represents a subset of the vocabulary which is used in the given task;

receiving speech information of the given task; and

processing the received speech information based on the scaled decision tree-based acoustical model.

8.    (Previously Presented)    The computer-readable medium of claim 7, further providing instructions, which if executed by a processor, cause the processor to perform the operations of:

scaling the decision tree-based acoustical model based on a hidden markov model (HMM) for the given task.

9.    (Previously Presented)    The computer-readable medium of claim 7, further providing instructions, which if executed by a processor, cause the processor to perform the operations of:

adapting the scaled decision tree-based acoustical model for the given task.

10.    (Currently Amended) A method comprising:

collecting a vocabulary knowledge used in a given task; and

trimming down a general acoustical model ~~according to the vocabulary knowledge used in the given task~~, wherein at least one node of the general acoustical model is merged with a parent node of the at least one node based on whether the at least one node represents a subset of the vocabulary knowledge used in the given task, wherein the merging occurs independent of whether the parent node of the at least one node represents a subset of the vocabulary knowledge used in the given task;

receiving speech information of the given task; and

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processing the received speech information based on the ~~scaled decision tree-based~~ trim-down general acoustical model.


11.     (Previously Presented)     The method of claim 10, further comprising:

adapting the trim-down general acoustical model for the given task.


12.     (Previously Presented)     The method of claim 11, wherein the adapting the trim-down general acoustical model includes:

collecting adaptation data, the adaptation data being related to the given task; and

adapting the trim-down general acoustical model to a task dependent acoustical model using the adaptation data.


13.     (Previously Presented)     The method of claim 12, further comprising:

interpolating the trim-down general acoustical model with the task dependent acoustical model to obtain a task specific acoustical model.


14.     (Previously Presented)     The method of claim 10, wherein the general acoustical model is a hidden markov model (HMM).


15.     (Currently Amended) A system comprising:

a memory to store a general acoustical model;

a processor to collect a vocabulary knowledge used in a given task and to trim down the general acoustical model ~~according to the vocabulary knowledge used in the given task,~~ wherein at least one node of the general acoustical model is merged with a parent node of the at least one node based on whether the at least one node represents a

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subset of the vocabulary knowledge used in the given task, wherein the merging occurs
independent of whether the parent node of the at least one node represents a subset of the
vocabulary knowledge used in the given task;

an input device to receive speech information of the given task; and

a signal processor to process the received speech information based on the trim-
down general acoustical model.

16.     (Previously Presented)       The system of claim 15, wherein the processor is
further to adapt the trim-down general acoustical model for the given task.

17.     (Previously Presented)       The system of claim 16, wherein the processor is
further to collect adaptation data, the adaptation data being related to the given task and
adapt the trim-down general acoustical model to a task dependent acoustical model using
the adaptation data.

18.     (Previously Presented)       The system of claim 17, wherein the processor is to
interpolate the trim-down general acoustical model with the task dependent acoustical
model to obtain a task specific acoustical model.

19.     (Previously Presented)       The system of claim 15, wherein the general
acoustical model is a hidden markov model (HMM).

20.     (Currently Amended) A computer-readable medium having instructions stored
thereon, which if executed by a processor, cause the processor to perform the operations
comprising:

collecting a vocabulary knowledge used in a given task; and

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trimming down a general acoustical model ~~according to the vocabulary knowledge used in the given task~~, wherein at least one node of the general acoustical model is merged with a parent node of the at least one node based on whether the at least one node represents a subset of the vocabulary knowledge used in the given task, wherein the merging occurs independent of whether the parent node of the at least one node represents a subset of the vocabulary knowledge used in the given task;

receiving speech information of the given task; and

processing the received speech information based on the trim-down general acoustical model.

21. (Previously Presented)    The computer-readable medium of claim 20, further providing instructions, which if executed by a processor, cause the processor to perform the operations of:

adapting the trim-down general acoustical model for the given task.

22. (Previously Presented)    The computer-readable medium of claim 21, further providing instructions, which if executed by a processor, cause the processor to perform the operations of:

collecting adaptation data, the adaptation data being related to the given task; and

adapting the trim-down general acoustical model to a task dependent acoustical model using the adaptation data.

23. (Previously Presented)    The computer-readable medium of claim 22, further providing instructions, which if executed by a processor, cause the processor to perform the operations of:

interpolating the trim-down general acoustical model with the task dependent acoustical model to obtain a task specific acoustical model.